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(54) Container and child-proof closure assemblies

(57) A container and child-proof closure assembly comprises a container (1) having a cylindrical open end externally screw-threaded (4) to receive an internally screw-threaded closure (10). The container has a pair of diametrically opposed projections (8, 9) for engagement in diametrically opposed open-ended slots (13, 14) located in an annular flexible skirt portion (12) when the closure is fully

screwed home thereby locking the closure. The inner surface of the skirt portion is annularly spaced from the container when the closure is applied thereto. To release the projections from the slots pressure is applied at diametrically opposed points of the skirt portion transverse to the diametrical line of the slots while the closure is rotated. The annular space between the skirt and container may be provided by a reduced diameter portion of the container and/or an increased internal diameter of the skirt portion.

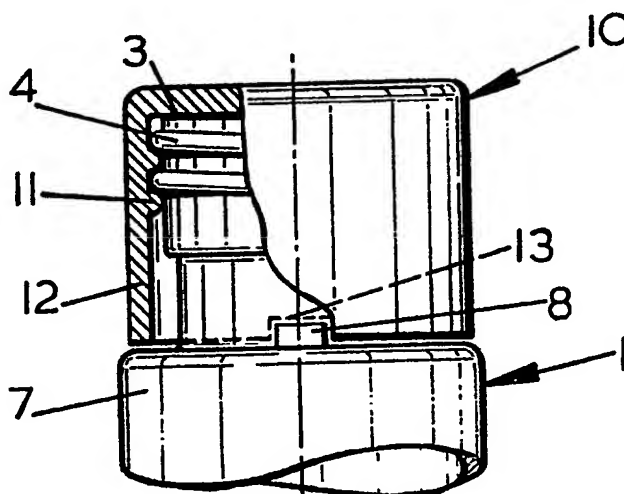


FIG. 1

The drawings originally filed were informal and the print here reproduced is taken from a later filed formal copy.

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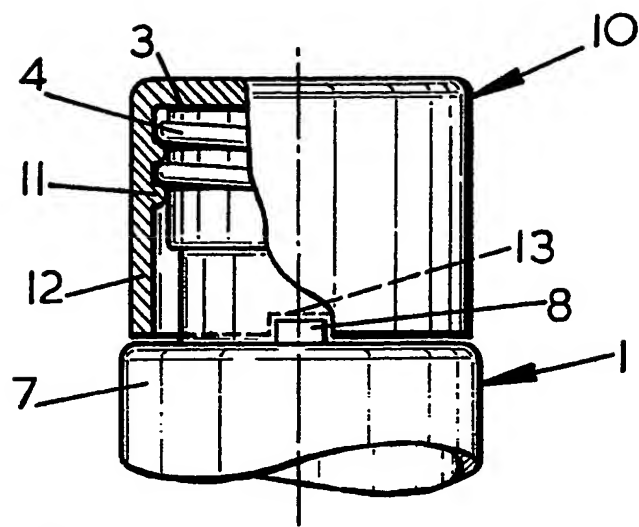


FIG. 1

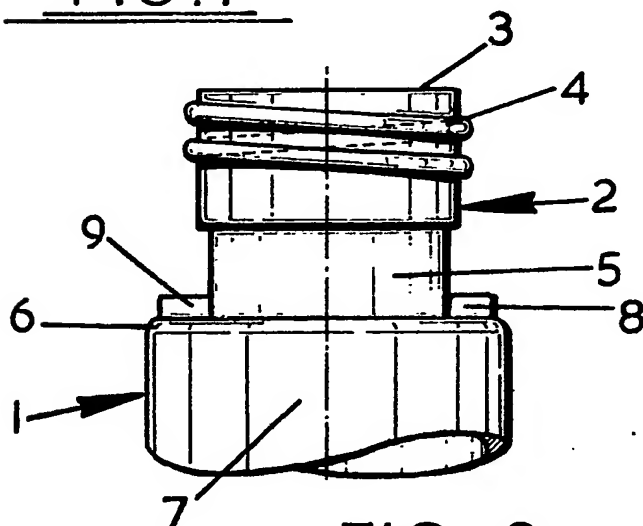


FIG. 2

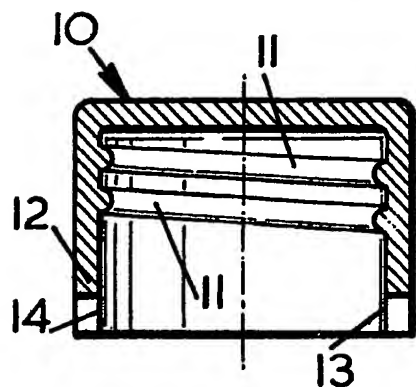


FIG. 3

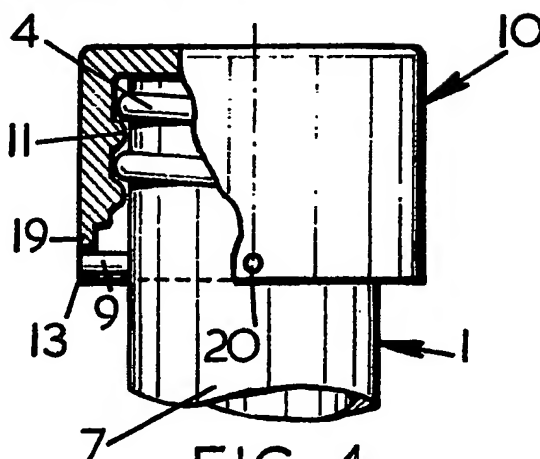


FIG. 4

SPECIFICATION

Container and child-proof closures therefor

This invention relates to containers and child-proof closures therefor.

5 Containers, such as bottles, provided with screw-cap closures allow for easy access to the contents but when the contents are drugs, poisons, dangerous liquids or the like, it is desirable that children should not have easy

10 access to the contents.
Child-proof closures for such containers have been developed which, although simple to operate, do not provide for easy access to the contents of the container by children.

15 The present invention provides for a screw-cap container with a child-proof closure which requires two simultaneous actions in order to unscrew the screw-cap closure.

A container and child-proof closure therefor
20 according to the invention comprises a container member having a cylindrical open end, an externally screw-threaded portion adjacent said open end and diametrically opposed projections spaced from the end of the screw-threaded
25 portion remote from said open end, said closure member being in the form of a cap having an internally screw-threaded portion terminating at its outer end at a flexible annular skirt portion
30 terminating at its outer end at a flexible annular skirt portion, said skirt portion having two diametrically opposed open ended slots therein, the inner surface of the skirt portion being
35 annularly spaced from the container, said slots being engageable with the projections when the closure member is fully engaged on the container and releasable from the projections when
40 diametrically opposed pressure is applied to the skirt portion transversely of the slots.

Embodiments of the invention are illustrated by way of example in the accompanying drawings in which:—

Fig. 1 is a side view of part of a container with a closure member partly in section according to a preferred embodiment of the invention;

45 Fig. 2 is a side view of part of the container of Fig. 1;

Fig. 3 is a sectional view of the closure member of Fig. 1; and

Fig. 4 is a view of part of a container with a closure member partly in section according to another embodiment of the invention.

Referring to Figs. 1 to 3 of the drawings, a container denoted generally at 1 is provided with a cylindrical neck portion indicated generally at 2
55 which is open at the end 3 and is provided with an externally screw-threaded portion 4 adjacent the open end 3 and a reduced diameter portion 5 adjacent the end of the screw-threaded portion remote from the open end 3.

60 A shoulder 6 is formed by the body portion 7 where it joins the neck portion 2 and diametrically opposed projections 8 and 9 extend from the end of the reduced diameter portion 5 adjacent the shoulder 6.

65 The projections 8 and 9 may be formed on the shoulder 6.

A closure member, indicated generally at 10, is in the form of a cap which envelopes the neck portion 2 when applied to the container.

70 The closure member or cap 10 is internally screw-threaded at 11 and at the outer end of the screw-threaded portion a flexible annular skirt portion 12 extends to the outer end of the closure member or cap.

75 A pair of diametrically opposed open-ended slots 13 and 14 are formed at the outer end of the skirt portion to receive the projections when the cap is applied to the container.

When the closure member or cap 10 is applied to the container neck, the flexibility of the skirt portion 12 of the closure member is such that it allows the skirt portion 12 to be distorted by the projections so that the closure member can continue to rotate while the skirt portion rides over the projections until the projections engage in the open-ended slots, at which position the closure member is fully engaged on the neck portion of the container and is locked against rotation relative to the container.

90 To remove the closure member from the container finger pressure is applied to diametrically opposed points on the skirt portion transverse to the diametrical line of the slots to distort the skirt portion sufficient to disengage the projections and allow the closure member to be rotated relative to the container.

95 Fig. 4 shows a modified embodiment of the invention in which the reduced diameter portion 5 of the neck portion of the container is omitted and the skirt portion 12 of the closure member is formed by an enlarged inner diameter 19 of the closure to allow for improved flexibility of the skirt portion.

The reduced diameter portion of the container or the enlarged inner diameter of the skirt portion of the closure member are not necessary, provided the inner surface of the skirt portion of the closure member is annularly spaced from the container neck portion and the skirt portion is sufficiently flexible to enable it to be sufficiently distorted, while on the container, to disengage the slots 13, 14 from the projections 8, 9 on the container and allow rotation of the closure member relative to the container.

115 Indicia 20 may be provided on the outer surface of the closure member to indicate the points to which pressure should be applied to release the closure member when locked on the container.

CLAIMS

120 1. A container and child-proof closure therefor comprising a container member having a cylindrical open end, an externally screw-threaded portion adjacent said open end and diametrically opposed projections spaced from the end of the screw-threaded portion remote from said open end, said closure member being in the form of a cup having an internally screw-threaded portion
125 terminating at its outer end at a flexible annular

skirt portion, said skirt portion having two diametrically opposed open-ended slots therein, the inner surface of the skirt portion being annularly spaced from the container, said slots
5 being engageable with the projections when the closure member is fully engaged on the container and releasable from the projections when diametrically opposed pressure is applied to the skirt portion transversely of the slots to distort the
10 skirt portion.

2. A container and closure therefor as claimed in claim 1 in which a reduced outer diameter

portion is provided on the container adjacent the end of the screw-threaded portion remote from the open end of the container.
15

3. A container and closure therefor as claimed in claim 1 or claim 2 in which the skirt portion of the closure member has an increased internal diameter.

20 4. A container and closure therefor as claimed in any of the preceding claims in which indicia is provided on the outer surface of the skirt portion to indicate the points to which pressure is to be applied to distort the skirt portion.

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